What is claimed is:

1. A wind power generation system comprising: a wind power generator, and a laser aerovane either mounted on said wind power generator or arranged near the wind power generator; wherein said laser aerovane observes direction and velocity of a wind blowing toward said wind power generator, at least either yaw angle or pitch angle of said wind power generator is controlled on the basis of results obtained by the observation, whereby output of the wind power generation system including the wind power generator is controlled.

2. The wind power generation system according to claim 1, wherein said wind power generator is provided with a variable-speed generator, and number of rotations of said wind power generator is controlled on the basis of the results obtained by the observation of said laser aerovane.

3. The wind power generation system according to claim 1, wherein said laser aerovane observes direction and velocity of the wind blowing toward said wind power generator by emitting a laser beam ahead of said wind power generator from said laser aerovane, catching a scattered wave of the laser beam scattered by aerosol that exists at any position distant from said wind power generator at an arbitrary distance, floats in the air and moves on the wind at the same speed as the wind, and detecting a phase difference between said laser beam and a scattered wave thereof in terms of the Doppler effect.

4. The wind power generation system according to claim 1, wherein, in a wind farm where plural wind power generators are arranged, output of the whole wind farm is smoothed on the basis of results obtained by observation of one or several laser aerovanes arranged in said wind farm.

5. The wind power generation system according to claim 1,

further comprising any other electric power generating means connected to an electric power system in the same manner as said wind power generator connected to the electric power system, wherein output of the wind power generation system including said wind power generator and said other electric power generating means is controlled on the basis of results obtained by the observation of said laser aerovane, and output of the whole wind power generation system is smoothed.

6. A wind power generation system comprising: a wind power generator, a laser aerovane either mounted on said wind power generator or arranged near the wind power generator, and an output-smoothing device connected to said wind power generator; wherein said laser aerovane observes direction and velocity of a wind blowing toward said wind power generator, output adjustment amount of said wind power generator is calculated in advance on the basis of results obtained by the observation, output of the wind power generation system including said wind power generator and said output-smoothing device is controlled on the basis of conditions obtained by the calculation, and output of the whole wind power generation system is smoothed.

7. The wind power generation system according to claim 6, wherein said output-smoothing device carries out output control so that output fluctuation in said wind power generation system is cancelled when the wind observed by said laser aerovane arrives at said wind power generator.

8. The wind power generation system according to claim 7, wherein said wind power generator is provided with a variable-speed generator and carries out output control so that output frequency fluctuation and output voltage fluctuation in said wind power generation system are within a predetermined range.

9. The wind power generation system according to claim 6, wherein said output-smoothing device is comprised of any of a storage battery, a reactive power compensator or an output limiting resistor.

10. The wind power generation system according to claim 6, wherein said laser aerovane observes direction and velocity of the wind blowing toward said wind power generator by emitting a laser beam ahead of said wind power generator from said laser aerovane, catching a scattered wave of the laser beam scattered by aerosol that exists at any position distant from said wind power generator at an arbitrary distance, floats in the air and moves on the wind at the same speed as the wind, and detecting a phase difference between said laser beam and a scattered wave thereof in terms of the Doppler effect.

11. The wind power generation system according to claim 6, wherein, in a wind farm where plural wind power generators are arranged, output of the whole wind farm is smoothed on the basis of results obtained by observation of one or several laser aerovanes arranged in said wind farm.

12. The wind power generation system according to claim 6, further comprising any other electric power generating means connected to an electric power system in the same manner as said wind power generator connected to the electric power system, wherein output of the wind power generation system including said wind power generator and said other electric power generating means is controlled on the basis of results obtained by the observation of said laser aerovane, and output of the whole wind power generation system is smoothed.